UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte STEVEN A. BERNSTEIN
and PAGE A. ERICKSON

Appeal No. 2006-0696
Application 90/005,546[1]

HEARD: 20 March 2006

Before GRON, MEDLEY, and NAGUMO, Administrative Patent Judges.

MEDLEY, Administrative Patent Judge.

VACATE AND REMAND

A. Introduction

This is an appeal under 35 U.S.C. § 134 from a decision of the examiner rejecting claims 1-53.

The application on appeal contains claims 1-53. Claims 1-53 have been rejected under 35 U.S.C. § 102(b) as being anticipated by T. L. Isenhour and S. E. Eckert, "Intelligent Robots - The Next Step in Laboratory Automation," Analytical Chemistry, Vol. 61, no. 13, 1 July 1989, pp.805-814 (Isenhour). Claims 19-23, 27-28 and 49 have been rejected under 35 U.S.C. § 102(b)

[1] The application is an application for reexamination of U.S. Patent 5,355,439 ('439), which issued 11 October 1994, based on application 08/740,285, filed 5 August 1991.

as being anticipated by Jonathan S. Lindsey, L. Andrew, and David Erb, "Robotic work station for microscale synthetic chemistry: On-line absorption spectroscopy, quantitative automated thin-layer chromatography, and multiple reactions in parallel," Rev. Sci. Instrum. 59(6), June 1988, pp. 940-950 (Lindsey). Claims 24-26 have been rejected under 35 U.S.C. § 103 as being unpatentable in view of Lindsey. Claims 1-18, 24-48 and 50-53 have been rejected under 35 U.S.C. § 103 as being unpatentable in view of Lindsey and M. Bartusch, R. H. Mohring and F. J. Radermacher, "Scheduling Project Networks with Resource Constraints and Time Windows," Annals of Operations Research, 16 (1988), pp. 201-240 (Bartusch).

For the reasons that follow, we vacate the examiner's rejections and remand the application to the examiner for action consistent with this decision.

B. Discussion

This case is complicated. There are several claims (sixteen independent claims), multiple rejections and several issues for consideration. Many of the claims, both independent and dependent, are replete with the word "means." When a limitation recites the word "means," there is a presumption that §112, ¶ 6 applies. See Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302, 50 USPQ2d 1429, 1435 (Fed. Cir. 1999). Appellants apparently agree that § 112, ¶ 6, applies with respect to the "means" terms (Brief at 12; Reply at 5; Response to 15 June 2006 Order). Yet, based on the record before us, there is no indication that the examiner has interpreted those claims which recite the word "means" as mandated by § 112, ¶ 6. However, as

explained in In re Donaldson Co., 16 F.3d 1195, 1189, 29 USPQ2d 1850, 1845 (Fed. Cir. 1994) (in banc),

> [T]he "broadest reasonable interpretation" that an examiner may give means-plus-function language is that statutorily mandated in paragraph six. Accordingly, the PTO may not disregard the structure disclosed in the specification corresponding to such language when rendering a patentability determination.

The examiner must determine the meaning of the recited function and then identify the structures, materials, and acts described in the specification, which correspond to a particular means for performing that function. Once the claimed subject matter has been identified, the prior art can be analyzed to determine whether the function is performed in the prior art reference by the same means or equivalents of the means. The construction of claim limitations cannot be made in a vacuum. Although extraneous limitations should not be read into the claims from the specification, E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433, 7 USPQ2d 1129, 1131 (Fed. Cir. 1988), claim limitations are always properly interpreted in light of the specification and prosecution history as they would be understood by one of ordinary skill in the art. Phillips v. AWH Corp., 415 F.3d 1303, 1313, 75 USPQ2d 1321, 1326 (Fed. Cir. 2005); Loctite Corp. v. Ultraseal Ltd., 781 F.2d 861, 868, 228 USPQ 90, 94 (Fed. Cir. 1985).

Based on the record before us, it is apparent that the examiner did not construe the functional language associated with the various means limitations. Nor has the examiner made a determination of the structure disclosed in the specification corresponding to the various recited means. For example, the examiner disregarded appellants' argument that the means for "controlling", "scheduling", and "comparing" recited in several of the claims are all performed

by the same computer. Instead, the examiner argued for a broader interpretation without regard to any corresponding structure (Answer at 28). This is legal error. As another example, in the Examiner's Answer regarding the anticipation of claim 19 by Lindsey, with respect to the "means for altering a sequence of process steps in response to progress information and in response to information from an operator," the examiner does not explain how she is interpreting the means-plus-function language. She merely quotes the claim language and directs the reader's attention to several pages of the Lindsey reference as allegedly meeting the claim limitation. (Answer at 20, lines 1-3).

The examiner failed to adequately construe the claim language not only with respect to those claims with means-plus-function limitations, but also with respect to claims without means-plus-function limitations. For example, the examiner finally rejected independent claim 49 as being anticipated by Lindsey. The rejection of claim 49 is discussed in conjunction with dependent claim 23. Dependent claim 23 depends from claim 21. Claim 21 depends from claim 19. Claims 19 and 21 are replete with the word "means." Claim 49 does not contain the word "means." Thus, claim 49 appears to be much broader in scope than claim 23. Yet, the examiner's comparison of Lindsey's teaching to the subject matter of claim 49 refers to language predominately appearing in claim 23. (Answer at 20-21). The examiner quotes language presumably taken from claim 23 and directs the reader's attention to various pages in the Lindsey reference. But claim 49 and claim 23 differ in language and scope, and it is not apparent from the claim language itself that a rejection of claim 49 would necessarily apply to claim 23 and

vice versa. The examiner should determine the scope and content of claims 49 and 23 separately.

The examiner has not established a *prima facie* case with respect to the rejections made. Ordinarily, an examiner's rejection would be reversed when the examiner has failed to make out a *prima facie* case. However, here we vacate the examiner's rejection and remand the application to the examiner for further consideration. We do so this because the examiner, at least with respect to the Lindsey reference, appears to have raised a valid question of patentability for at least some of the claims.[2] However, without proper claim construction, the patentability of the claimed subject matter over the prior art cannot be adequately evaluated. Accordingly, we can neither reverse nor sustain the examiner's rejections of the claims. See MPEP § 2181, Eighth Edition, Revision 4 (Oct. 2005). The appeal is not ripe for our consideration.

We do not remand the application without good cause. There are far too many claims with far too many means-plus-function limitations where a construction of the claims is lacking or altogether missing and the prior art teachings have not been adequately compared to the full scope of the subject matter claimed. Our principal function is review, not examination de novo.

Lastly, we note that the examiner has made multiple rejections. Prior art rejections should ordinarily be based on the best available art. Cumulative rejections, should be avoided. See Id. § 706.02(I). Upon reconsideration, the examiner is encouraged to apply only the best

[2] During oral argument, the panel asked counsel for applicants why the teachings of Lindsey did not meet certain limitations of independent claim 19. Counsel for applicants responded that for claim 19, "the examiner has a pretty strong case with respect to this claim."

prior art to the claims. Proper claim interpretation should simplify the issues for appellate review.

As guidance to the examiner, for two limitations that are at issue in the appeal, we indicate how the limitations may be construed, and whether, based on that construction, the Lindsey reference describes those limitations. The examiner may also find assistance from applicants' response to the Board's request for additional briefing. Specifically, appellant submitted a claim chart identifying every means-plus-function or step plus function recited in each independent and dependent claim argued separately on appeal, and the corresponding structure, material or acts described in the specification which correspond to each claimed function by reference to the specification by page and line number, and to the drawings by reference numeral in accordance with Bd.R. 50(d) and Bd.R. 37(c)(1)(v). See "Response to June 15, 2006 Board Order 50(d) for Additional Briefing" in application 90/005,546, dated 30 June 2006.

Independent claims 19, 24 and 27 and "interleave"

At least independent claims 19, 24 and 27 recite a processor means that directs the "robotic arm to interleave the process steps of said plurality of independent analysis procedures..." (emphasis added). An issue raised in the appeal is the meaning of the word "interleave." In order to properly construe the quoted phrase, it must be determined what "interleave" means and what is being interleaved.

During prosecution, claim limitations are to be given their broadest reasonable interpretion in light of the specification. In re Morris, 127 F.3d 1048, 1054 (Fed. Cir. 1997; In re

Bond, 910 F.2d 831, 833, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990). Hence, we look to the specification to determine the meaning of interleave and what is being interleaved.[3] The specification teaches that the robotic arm interleaves the steps of the individual analysis procedures by transporting "different samples in a time efficient sequence rather than a process ordered sequence." (5,355,439, col. 16, lines 48-66). Interleaving is accomplished when the robotic arm transports a sample to a work station and then, before working on that sample, the arm moves another sample through another analysis procedure before returning to the first sample (id. at col. 16, line 62, to col. 17, line 3). What is being interleaved are the steps of more than one independent analysis procedure. The steps of one independent analysis procedure may be the same or different than the steps of another independent analysis procedure (id. col. 4, lines 19-22).

Lindsey appears to describe interleaving the steps of a plurality of individual analysis procedures as claimed. Lindsey describes steps of several individual analysis procedures running simultaneously. Each procedure has multiple "steps" or stages (e.g., plate dispensing, sample application, plate development and plate densitometry). The procedures are processed simultaneously "with interleaving-segmented schedules" for the steps within each procedure (Lindsey Abstract). Figure 5 on page 947 of Lindsey illustrates that when the robotic arm is

[3] We reject appellants' notion that, because the term is not defined in the specification, "interleave" must be interpreted by looking to the dictionary definition of interleave (Brief at 22). Contrary to applicants' argument, interleaving is described in applicants' specification, and thus it would be improper to give a dictionary definition to that word over the meaning of the word in the specification. Phillips v. AWH Corp., 415 F.3d 1303, 1320-1324, 75 USPQ2d, 1321, 1332-1335 (Fed. Cir. 2005).

finished moving a sample to plate 1 of a first procedure, it moves to plate 2 of another procedure at the ten minute mark. The robotic arm then moves back to plate 1 just prior to the twenty minute mark, before the robotic arm moves back to plate 2, then on to plate 3 of yet another procedure. Thus, Lindsey's robotic arm appears to interleave the various steps (stages) of a plurality of independent analysis procedures performed on the different plates.

Independent claim 27 and means for altering

Independent claim 27 recites "means for altering a sequence of said process steps in response to said progress information and in response to information from an operator," a limitation that appellant argues Lindsey fails to describe (Brief at 25). The word "means" is employed and structure is recited to perform the alteration of the sequence of the process steps. Thus, there is a presumption that §112, ¶ 6 applies.

Applicants' specification teaches that adjustments to timing may be made by an operator even as the process is running, provided that the steps in the process which are to have their timing altered have not been reached. (Col. 13, line 66, to col. 14, line 60). The specification also teaches that steps may be added or reconfigured while the program is running and that the computer will recalculate all of the movements to complete the run and insure that there is no time interference created by the modification. (Emphasis added) (Col. 17, lines 17-24). Thus, "altering a sequence" of steps as described includes altering the timing of the steps or altering the order of steps. The computer is capable of monitoring the tasks and the timing of the tasks. (Col. 16, lines 53-56). According to the specification, the "means" that performs the altering is computer software. (Col. 17, lines 13-24).

The "means for altering" appears to be computer software that controls the alteration of the sequence of steps (the order or timing) based on input from an operator and based on monitoring of the steps by the program itself. It appears that the computer software alters the sequence - not an operator. Thus, an operator that turns off or shuts down a computer would not appear to be a "means for altering a sequence of said process steps in response to said progress information and in response to information from an operator". It would be the operator that causes the "altering" of the sequence by shutting down the computer, and not the computer through its software that recalculates the movements or performs the altering. In contrast to the previous example, Lindsey does not appear to teach this feature - software that, based on input from an operator and progress information, alters the timing or order of the steps to be performed. At best, Lindsey teaches that an operator may shut down the system. To compare Lindsey's teaching to the subject matter claimed, it is important to know the metes and bounds of the subject matter claimed. On the present record, it appears that an additional reference may be required to reject claims containing this "altering" limitation for obviousness.

C. Decision

The examiner's rejections of (1) claims 1-53 as being anticipated under 35 U.S.C. 102(b) by Isenhour, (2) claims 19-23, 27-28 and 49 as being anticipated under 35 U.S.C. § 102(b) by Lindsey, (3) claims 24-26 as being unpatentable under 35 U.S.C. § 103 in view of Lindsey, and (4) claims 1-18, 24-48 and 50-53 as being unpatentable under 35 U.S.C. § 103 in view of

Lindsey and Bartusch are vacated, and the application is remanded for action consistent with the views expressed herein.[4]

Vacated and Remanded

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TEDDY S. GRON	)
Administrative Patent Judge	)
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_____	) BOARD OF PATENT
SALLY C. MEDLEY	) APPEALS AND
Administrative Patent Judge	) INTERFERENCES
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MARK NAGUMO	)
Administrative Patent Judge	)

[4] For an explanation of further proceedings where a rejection has been vacated and the application remanded, see Ex parte Zambrano, 58 USPQ 2d 1312 (Bd. Pat. App. & Int. 2001).

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